PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference MMS00118-PCT	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/JP2004/010099	International filing date *(day/month/year)* 15 July 2004 (15.07.2004)	Priority date *(day/month/year)* 29 July 2003 (29.07.2003)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant MITSUI MINING & SMELTING CO., LTD.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 15 May 2006 (15.05.2006)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 740 14 35	Authorized officer Masashi Honda Telephone No. +41 22 338 70 10

Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

TRANSLATION

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

	Date of mailing *(day/month/year)*
Applicant's or agent's file reference MMS00118-PCT	FOR FURTHER ACTION See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/JP2004/010099	15.07.2004	29.07.2003

International Patent Classification (IPC) or both national classification and IPC

Applicant
MITSUI MINING & SMELTING CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I — Basis of the opinion
- ☐ Box No. II — Priority
- ☐ Box No. III — Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV — Lack of unity of invention
- ☒ Box No. V — Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI — Certain documents cited
- ☐ Box No. VII — Certain defects in the international application
- ☐ Box No. VIII — Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP	Authorized officer
Facsimile No.	Telephone No.

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2004/010099

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material

      ☐ in written format

      ☐ in computer readable form

   c. time of filing/furnishing

      ☐ contained in the international application as filed.

      ☐ filed together with the international application in computer readable form.

      ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2004/010099

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-7	YES
	Claims		NO
Inventive step (IS)	Claims	3-7	YES
	Claims	1, 2	NO
Industrial applicability (IA)	Claims	1-7	YES
	Claims		NO

2. Citations and explanations:

Document 1: JP 2001-107101 A (Mitsui Mining & Smelting Co., Ltd.), 17 April 2001
Document 2: JP 2003-034802 A (Mitsui Mining & Smelting Co., Ltd.), 07 February 2003
Document 3: JP 2003-129106 A (Murata Mfg. Co., Ltd.), 08 May 2003

Regarding claims 1, 2

Document 1 cited in the ISR describes a highly dispersible spherical silver powder (see claims, Par. No. 0001, etc.), which is optimally suitable for the production of electrically conductive paste.

Document 2 cited in the ISR describes a low aggregation copper powder used for preparing a copper paste (see claims etc.), which is characterized by the fact that the value of the degree of its aggregation, expressed as D50/DIA, is 1.5 or less, with the mean particle size D50 determined by a particle size distribution measurement method based on laser diffraction and scattering and the mean particle size DIA obtained by image analysis.

Document 3 cited in the ISR describes a nickel powder used for preparing an electrically conductive paste (see claims, etc.), and mentions that in case of Ni sintering, the smaller its physical size, i.e. the size observed under an electron microscope, the smaller the crystallite size at lower temperatures (see Par. No. 0038).

As can be gleaned from document 3, it is well-known that, in general, if the particle size and crystallite size of a powder is smaller, then the sintering temperature is lowered.

In the invention described in document 1, it would be easy for a person skilled in the art to appropriately restrict the degree of aggregation to not more than a certain level with the help of a measure such as the one used in document 2 and, in order to make it sinterable at lower temperatures, to restrict the particle size and crystallite size to not more than a certain level.

Regarding claims 3-7

None of documents 1-3 cited in the ISR mentions that when a silver powder is prepared by reacting a silver ammine complex and an organic reducing agent, the concentration of silver in the solution after mixing is maintained at 1-6 g/L, and the concentration of the organic reducing agent at 1-3 g/L, which means that an expert in the relevant technical field could not have simply and theoretically derived it from prior art.